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Does the U.S. president affect the stock market?☆

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ABSTRACT

Previous research shows that Democrat- and Republican-leaning investors hold different stock market expectations. In this paper, I identify a novel channel through which political opinions affect investor behavior. Instead of political affiliation, I consider nonpartisan evaluations of the executive from presidential approval rating polls. I find that large net disapproval over the U.S. president's job is followed by low stock returns, especially in times of high political uncertainty and low market-wide sentiment. Notably, this mechanism explains away Santa-Clara and Valkanov's (2003) "presidential puzzle." Overall, the findings suggest that nonpartisan political views have a substantial impact on stock prices.

1. Introduction

A large body of evidence shows that Democrats and Republicans in the United States hold different economic expectations (e.g., Gerber and Huber, 2009; Mian et al., 2021). Party affiliation acts as a "perceptual screen" (Campbell et al., 1960), and also affects a number of financial outcomes, such as stock market participation (Kaustia and Torstila, 2011), risk taking (Bonaparte et al., 2017; Meeuwis et al., 2018), asset allocation (Hong and Kostovetsky, 2012); Addoum and Kumar, 2016), and analysts' forecasts (Kempf and Tsoutsoura, 2021). Overall, economic agents tend to be more optimistic when their preferred political party is in power, and more pessimistic otherwise.

In this paper, I identify a novel channel through which political views affect investor behavior. Instead of political affiliation, I analyze nonpartisan evaluations of the executive from presidential approval rating polls. This approach acknowledges the fact that political opinions do not necessarily coincide with party lines, as parties are often divided within their own ranks (e.g., Andeweg and Thomassen, 2010; Jewitt and Treul, 2014). To the degree that pessimistic investors abstain from stock trading, large disapproval over the president's job should generate overpricing, and then low subsequent returns.[1]

Using U.S. stock market data from January 1948 through December 2015, I find evidence consistent with this conjecture. The effect is especially strong in times of high political uncertainty and low market-wide sentiment. Notably, this mechanism explains away the large difference in stock returns between Democratic and Republican administrations, known as the "presidential puzzle"

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[1] A large literature shows that unsophisticated investors tend to leave the market when they hold pessimistic beliefs (e.g., Chen et al., 2002; Diether et al., 2002; Lamont and Thaler, 2003; Scheinkman and Xiong, 2003; Hong et al., 2006; Amromin and Sharpe, 2009; Grinblatt and Keloharju, 2009; Hong and Sraer, 2013; Antoniou et al., 2016).

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(Santa-Clara and Valkanov, 2003). The results hold both for the market portfolio and at the stock level. I also find that large presidential disapproval is associated with a decrease in mutual fund flows and breadth of ownership, which lends support to the hypothesized mechanism underlying the results.

Recent research shows that investors differ in their asset allocation depending on their party affiliation (Hong and Kostovetsky, 2012; Bonaparte et al., 2017; Meeuwis et al., 2018), creating predictable patterns for stock returns (Santa-Clara and Valkanov, 2003; Addoum and Kumar, 2016). To the best of my knowledge, I am the first to show that nonpartisan political views also have a substantial impact on stock prices. More generally, the results lend support to the idea that nonmonetary values play an important role in understanding investor behavior (Grinblatt and Keloharju, 2009; Bhattacharya and Groznik, 2008; Hong and Kacperczyk, 2009; Morse and Shive, 2010).

I collect Gallup's nationwide approval rating polls, which constitutes a measure of how the U.S. president's job is perceived by the general public at a given point in time. The polls are carried out periodically, and the average number of respondents is approximately 1500 adults. The typical question asked is "Do you approve or disapprove of the way the president is handling his job?", and the answer can be positive, negative, or neutral. The proportions of positive and negative answers are commonly referred to as approval and disapproval ratings, respectively.

One of the main determinants of presidential approval ratings is the evaluation of the president's handling of the economy (e.g., MacKuen, 1983; Nadeau et al., 1999; Berlemann and Enkelmann, 2014). Therefore, I hypothesize that agents who have a positive evaluation of the president's job exhibit more optimistic economic expectations than agents with a negative evaluation. As a result, supporters and opponents of the president should also carry out different investment strategies. Specifically, these two types of investors can be thought of as optimists and pessimists, respectively.[2]

When disapproval over the president's job is high, the group of pessimistic investors becomes relatively large with respect to the group of optimists. As agents with pessimistic beliefs are less likely to participate in equity markets (e.g., Antoniou et al., 2016), and typically face short-sales constraints (e.g., Chen et al., 2002; Hong and Sraer, 2013), the stock market should mainly reflect optimistic beliefs during such times. In the presence of limits to arbitrage (e.g., Hirshleifer and Teoh, 2003), stocks should become overpriced, and generate lower returns (e.g., Diether et al., 2002).

To test this hypothesis, I start with a time series analysis of aggregate stock returns. For this group of tests, the dependent variable is the excess returns on the U.S. stock market portfolio, defined as the set of all stocks traded on the NYSE, AMEX, and NASDAQ, and retrieved from Kenneth French's website. The main regressor is net disapproval ratings, defined as the difference between disapproval and approval ratings over the U.S. president. This variable captures the relative size of the groups of presidential opponents and supporters, respectively, and thus represents a key measure of the popularity of the U.S. president (Abramowitz, 2004, 2008). The sample includes the postwar era until 2015.[3]

The empirical evidence lends support to the conjecture. I find that net disapproval of the U.S. president is indeed followed by low stock returns, and the effect is entirely concentrated in times of low presidential popularity. When net disapproval is positive (i.e., the president's disapproval ratings are higher than approval ratings), a 1% increase in net disapproval is associated with a 0.11% decrease in excess stock returns over the following month. Conversely, the effect is close to zero in both magnitude and significance when net disapproval is negative. The estimates are robust to a battery of economic, financial, and political controls.[4]

In times of high uncertainty, the views of optimists and pessimists grow farther apart (e.g., Bloom, 2014). As a result, the overpricing caused by pessimists leaving the market should become more pronounced (e.g., Hong and Stein, 2007), thus making the effect of net disapproval on stock returns even stronger. To test this prediction, I condition the analysis on political uncertainty, alternatively defined as periods of divided government (e.g., Alesina and Rosenthal, 1995, 1996), presidential second terms (e.g., Alesina and Cukierman, 1990), and the index of economic policy uncertainty from Baker et al. (2016). Consistent with the hypothesis, I find that positive net disapproval is followed by an even larger decrease in stock returns when political uncertainty is high.

Next, I study how the results vary with market-wide sentiment. The intuition is as follows. While presidential disapproval reflects differences of political opinion between partisans and opponents of the president, market-wide sentiment can be thought of as a baseline level of sentiment that is in common to both groups. Low market-wide sentiment then shifts the distribution of these investors' beliefs to the left, without affecting rational valuations (e.g., Cen et al., 2013). In light of these considerations, the effect of net disapproval on stock returns should be especially pronounced in periods of low sentiment.

To test this hypothesis, I consider Baker and Wurgler's (2007) monthly investor sentiment index, orthogonalized to business cycle indicators, and the consumer sentiment index from the University of Michigan (e.g., Carroll et al., 1994), as these two measures of sentiment are widely used in the literature (e.g., McLean and Zhao, 2014). Consistent with the predictions, I find that the effect of positive net disapproval on stock returns is mostly confined to times of low investor and consumer sentiment. This finding also

[2] In this regard, approval and disapproval ratings exhibit a number of desirable properties. In contrast to party affiliation, these measures are time-varying, continuous, and include independent voters. Unlike economic forecasts, they identify optimists and pessimists ex-ante rather than ex-post.

[3] The Trump administration is excluded from the analysis due to its rather exceptional nature in terms of approval ratings. The average net disapproval was 0.13 for the last president, and positive during 94% of the presidential term. For comparison, the average net disapproval in previous presidencies was −0.17, and positive during only 26% of the presidential term.

[4] The results are also robust to the inclusion of alternative measures of aggregate economic beliefs from the Thomson Reuters/University of Michigan Surveys of Consumers and the NBER/Federal Reserve of Philadelphia Survey of Professional Forecasters, and to a number of alternative specifications, such as equal-weighted returns, quantile regressions, a sample breakdown into different time periods, a conservative Bonferroni correction, a variety of fixed effects, and IV regressions where I use U.S. mass shootings as a source of exogenous variation in disapproval over the president's job.

lends further support to the idea that presidential approval ratings mostly capture the evaluation of the president's handling of the economy.

In the last group of time series tests, I analyze whether the results also vary with the political affiliation of the president. This is a relevant dimension to explore for at least two reasons. First, Republican administrations are characterized by lower stock returns (Santa-Clara and Valkanov, 2003). Second, there is a strong positive association between Republican presidencies and divided government. To get a sense of the magnitude, Republican presidents have dealt with a hostile Congress 83% of the time during the sample period, whereas Democrats only 38%.[5]

This correlation is especially important for the mechanism I propose. When the White House and Congress are not dominated by the same political party, Republicans and Democrats simultaneously and mutually obstruct each other, making political outcomes less predictable and efficient (Alesina and Rosenthal, 1995, 1996; Chari et al., 1997; Coleman, 1999). As a result, periods of divided government represent a particularly uncertain state of affairs in politics. In light of these considerations, the lower stock returns of Republican administrations might simply reflect the stronger effect of positive net disapproval on stock returns during the uncertain times that characterize divided government.

This story has three testable implications. First, the effect of positive net disapproval on stock returns should be significantly stronger when the president is a Republican. Second, the explanatory power of presidential affiliation as a moderating variable should disappear when introducing divided government in the analysis. Third, and most notably, this mechanism should explain away Santa-Clara and Valkanov's (2003) presidential puzzle, i.e., the effect of presidential affiliation as a standalone variable on stock returns. I find strong empirical evidence for all three predictions.

Pástor and Veronesi (2020) propose a theoretical model of political cycles in which the presidential puzzle emerges endogenously, due to time-varying risk aversion. They find that Republican candidates win the presidency when electors prefer less insurance and more business risk. As a result, average stock returns are lower when the president is a Republican. The mechanism I identify constitutes an additional channel for their story. Under Republican administrations, the higher stock prices generated by low risk-aversion increase even further when pessimistic investors sit out of the market.

One potential concern is that the results might reflect some form of systematic risk not accounted for by macroeconomic variables, or some firm characteristics that affect stock returns in their own right. To address these issues, I perform a stock-level analysis using data from CRSP-Compustat. Specifically, I run Fama–MacBeth regressions controlling for a number of firm-level characteristics from Edmans (2011), risk-factor loadings from Pástor and Stambaugh (2003), and Fama and French (2015), and idiosyncratic volatility, defined as in Ang et al. (2006), and used as a proxy for stock-level differences of opinion (Baker et al., 2007). I find that the effect of positive net disapproval on stock returns is negative and significant also at the stock level, and only present under Republican administrations.

In the last set of tests, I provide further insight on the mechanism through which pessimistic opinions are not fully incorporated into stock prices. There are three potential channels. First, pessimistic agents who are invested simply sell their stocks to optimists (e.g., Hong and Stein, 2007). Second, pessimistic agents who are not invested are unlikely to buy (e.g., Antoniou et al., 2016). Third, uninvested pessimistic agents do not sell short because they face short-sales constraints (e.g., Chen et al., 2002; Hong and Sraer, 2013). Altogether, these channels imply that high presidential disapproval should be associated with negative mutual fund flows, as pessimistic investors sell out of the market (Edelen and Warner, 2001), and lower breadth of ownership, as fewer investors hold long positions (Chen et al., 2002). I find evidence consistent with both predictions.

The paper proceeds as follows. In Section 2, I introduce the hypotheses. In Section 3, I describe the data. I present the empirical results in Section 4. Concluding remarks are in Section 5.

2. Hypotheses

Recent research shows that political affiliation affects investor decisions. Kaustia and Torstila (2011) find that left-wing individual investors are less likely to participate in the stock market, controlling for income, wealth, education, and a variety of other relevant factors. The effect is also sizeable, as a moderate left voter is 17%–20% less likely to own stocks than a moderate right voter. Bonaparte et al. (2012) find that investors in Republican (Democratic) dominated regions overweight (underweight) politically sensitive stocks, and conclude that optimism is a dynamic trait that is influenced by the changing political environment.

A similar behavior also characterizes institutional investors. Hong and Kostovetsky (2012) find that asset managers who make donations to the Democratic Party underweight (relative to non-donors or Republican donors) stocks that are typically favored by Republican administrations, such as those from the tobacco, guns and defense, natural resources, and alcohol industries. The donations are not made to improve stock performance, influenced by the overarching political orientation of the fund's management, or driven by investor preferences. Hence, the phenomenon seems to constitute a genuine political bias.

Building on this mechanism, I identify a novel source of political sentiment. Instead of considering differences of opinion between Republicans and Democrats, I analyze nonpartisan political views using Gallup's presidential approval rating polls. Following Abramowitz (2004, 2008), I focus on the difference between approval and disapproval ratings. This is for two reasons. First, this variable has large explanatory power over the outcome of U.S. presidential elections. Second, it is less sensitive to the decrease over time in the proportion of Gallup respondents who do not express an opinion.

[5] Since Republican administrations have faced a number of particularly tough and controversial issues in the postwar era (Blinder and Watson, 2016), it is possible that voters may have sought to divide government more often under Republicans in an attempt to achieve policy moderation (Alesina and Rosenthal, 1995).

The conceptual framework I consider features two types of traders: highly sophisticated investors who evaluate stocks rationally (i.e., arbitrageurs), and less sophisticated investors who are prone to biases such as optimism or pessimism (Chen et al., 2002; Hong and Stein, 2007; Hong and Sraer, 2016), also of political nature (Kaustia and Torstila, 2011; Hong and Kostovetsky, 2012). Specifically, optimists and pessimists disagree with each other (Cen et al., 2013; Hong and Sraer, 2013).

When net disapproval is high, the group of presidential opponents becomes relatively large with respect to the president's supporters. To the degree that agents with pessimistic beliefs participate less in equity markets (Antoniou et al., 2016), and face short-sales constraints (Chen et al., 2002), the stock market becomes mostly populated by optimistic investors during such times. In the presence of limits to arbitrage, stocks become overpriced (Diether et al., 2002; Hong and Sraer, 2013). This implies:

Hypothesis 1. Large net disapproval over the president's job is followed by low stock returns.

The effect should be especially strong when uncertainty is high. As beliefs become more dispersed during uncertain times (Bloom, 2014), the views of optimists and pessimists diverge even further. Therefore, the overpricing should become more pronounced when pessimists leave the market (Hong and Stein, 2007). This implies:

Hypothesis 2. The low stock returns that follow large net disapproval are especially pronounced in periods of high uncertainty.

The effect should also vary with market-wide sentiment. While presidential disapproval reflects differences of political opinion between partisans and opponents of the president, market-wide sentiment represents a baseline level of sentiment that is in common to both investor groups. Low market-wide sentiment then shifts the beliefs of these investors to the left, without affecting rational valuations (Cen et al., 2013). As a result, fewer pessimistic opinions are incorporated into the stock price, thus increasing the overpricing. This implies:

Hypothesis 3. The low stock returns that follow large net disapproval are especially pronounced in periods of low sentiment.

In the empirical analysis that follows, I take these predictions to the data.

3. Data

To construct the main independent variable, I consider Gallup's U.S. monthly approval rating polls from January 1948 through December 2015.[6] Whenever more than one poll is carried out in a given month, I pick the latest poll available. The survey is conducted nationwide over a sample of approximately 1500 adults, and the typical question asked is "Do you approve or disapprove of the way the president is handling his job?" The answer can be positive, negative, or neutral. Therefore, approval ratings measure the proportion of positive responses over the total number of interviews, while disapproval ratings measure the proportion of negative responses.

To test my three hypotheses, the main variable of interest is net disapproval (ND). To identify large net disapproval, I consider the instance in which disapproval ratings are higher than approval ratings. Specifically, I construct the following variables: positive net disapproval (PND), defined as a variable that equals the difference between disapproval and approval ratings when this difference is positive, and zero otherwise; negative net disapproval (NND), defined as a variable that equals the difference between disapproval and approval ratings when this difference is negative, and zero otherwise; a positive net disapproval dummy ($PND(d)$), defined as a dummy variable that takes on a value of one if net disapproval is positive, and zero otherwise; and a negative net disapproval dummy ($NND(d)$), defined as a dummy variable that takes on a value of one if net disapproval is negative, and zero otherwise.[7]

The main dependent variable is excess returns on the U.S. stock market portfolio, defined as the set of all stocks traded on the NYSE, AMEX, and NASDAQ. To construct excess returns, I define the risk-free rate as the 30-day T-bill rate. Both variables are retrieved from Kenneth French's website, and expressed in logs. As controls, I also include the lagged dependent variable; a variable that captures reversals, defined as the average log-return of the dependent variable over the previous year; and volatility, defined as the standard deviation of the dependent variable estimated on a 12-month rolling window.

I also include economic and political controls. Economic controls are the business cycle predictors from Santa-Clara and Valkanov (2003). This set of variables includes the log dividend–price ratio; the relative interest rate, computed as the deviation of the three-month Treasury bill rate from its one-year moving average; the term spread, defined as difference between the yield to maturity of a constant ten-year maturity Treasury note and the three-month Treasury bill; and the default spread, defined as the difference between the yield on BAA and AAA corporate bonds.

Political controls include a dummy variable for each of the four years of the presidential term, where the first year is set as reference category, and a set of dummy variables for Democratic presidents, Congress election months, presidential election months, and the first month of the presidential term. To capture the political climate that follows the outcome of presidential elections, I also consider presidential election margins (e.g., Abramowitz, 2012). Specifically, I introduce a variable that takes on the absolute value of the presidential election margin for the first year of the presidential term, and zero otherwise.

[6] The database is also made available to the general public by the American Presidency Project at UC Santa Barbara (presidency.ucsb.edu/statistics/data/presidential-job-approval).

[7] Note that $PND = ND \times PND(d)$ and $NND = ND \times NND(d)$. In the analysis that follows, I also explore the instance in which net disapproval clears nonzero thresholds.

To define uncertainty, I consider three measures that are specifically related to politics. First, I introduce a dummy variable for divided government, because this is a state of affairs that makes political outcomes less predictable and efficient (Alesina and Rosenthal, 1995, 1996; Chari et al., 1997; Coleman, 1999). Second, I introduce a dummy variable for presidential second terms, as presidents who do not run for re-election are more free to pursue their own preferred policies, thus becoming less moderate (Alesina and Cukierman, 1990). Third, I include the index of economic policy uncertainty from Baker et al. (2016), as in Pástor and Veronesi (2013).

As measures of market-wide sentiment, I consider Baker and Wurgler's (2007) investor sentiment index, and the University of Michigan's consumer sentiment index (e.g., McLean and Zhao, 2014). These indices capture the average degree of optimism or pessimism of unsophisticated investors with respect to financial markets and the real economy, respectively.

Lastly, I introduce measures of macroeconomic expectations. In the spirit of Li and Li (2014), I consider the 12-month business conditions forecast ($BEXP$) and the evaluation of government economic policy ($GOVT$) from the Thomson Reuters/University of Michigan Surveys of Consumers, and forecasts of the real gross national product ($RGDP$) and the industrial production index ($INDPRO$) from the NBER/Federal Reserve of Philadelphia Survey of Professional Forecasters. For each measure, I estimate both the first and the second moment of the belief distribution.[8]

4. Empirical analysis

I present the empirical findings as follows. First, I explore some summary statistics. Second, I test the hypotheses introduced above through time series tests. Third, I explore a number of additional specifications. Fourth, I analyze the relation between net disapproval and (Santa-Clara and Valkanov's 2003) presidential puzzle. Finally, I perform a stock-level analysis.[9]

4.1. Summary statistics

4.1.1. Democratic and Republican presidents

Table 1 presents the first set of summary statistics. Following Santa-Clara and Valkanov (2003), I split the full sample into two subsamples of Democratic and Republican presidencies, respectively, to analyze whether the estimates vary with the political affiliation of the president. The number of observations is 384 for Democratic administrations and 432 for Republican ones, for a total amount of 816 term-months overall.

In Panel A, I consider the financial variables. In the full sample, the average monthly return is 0.9% for the value-weighted stock market portfolio, and 1.1% for its equal-weighted counterpart. Excess returns are 0.5% and 0.8%, respectively. The presidential affiliation breakdown shows that average stock returns are significantly higher under Democratic presidents, which is in line with the presidential puzzle.

Panel B includes Gallup's approval rating polls. Across all presidencies, the average approval rating is 52.8%, the average disapproval rating 35.5%, and the average proportion of neutral responses is 10.4%. Republican presidents have a higher average approval rating than Democrats (3.5%), a lower disapproval rating (4.1%), and a lower net disapproval rating (7.7%). Specifically, net disapproval is positive 32.6% of the time under Democrats, and 20.6% under Republicans. However, positive net disapproval does not vary significantly across administrations.

Panel C presents indicators of political uncertainty. More than half of the term-months in the sample are characterized by divided government (61.8%), but this estimate varies dramatically with presidential affiliation. Democrats faced this situation 37.5% of the time, while Republicans 83.3%. On other hand, 42.0% of term-months in the sample are characterized by presidents on their second term (46.9% for Democrats and 37.7% for Republicans). The economic policy uncertainty index does not vary significantly with presidential affiliation.

Panel D reports measures of market-wide sentiment. Republican administrations are associated with higher investor sentiment, while Democratic presidencies with higher consumer sentiment. This is in line with the findings from Blinder and Watson (2016), and more generally with the idea that Republican presidencies are associated with a more favorable business environment (Pástor and Veronesi, 2020).

Lastly, Panel E includes measures of macroeconomic expectations. A clear-cut pattern emerges. Under Republican presidencies, both households and professional forecasters seem to be more optimistic, in the sense that their average expectations are significantly higher. However, such evaluations are also more dispersed. This holds for each of the variables under consideration.

4.1.2. Presidential term-years

In Table 2, I present a second set of summary statistics, with a breakdown across presidential term-years. In Panel A, the average monthly returns on the value-weighted stock market portfolio are 0.8% and 0.7%, respectively, in the first two years of the

[8] Note that the Surveys of Consumers data includes qualitative responses. For $BEXP$, the survey question is "(...) About a year from now, do you expect that in the country as a whole business conditions will be better, or worse than they are at present, or just about the same?", and the answers are "Better", "About the same", "Worse", "I don't know", and "N/A". For $GOVT$, the survey question is "As to the economic policy of the government – I mean steps taken to fight inflation or unemployment – would you say the government is doing a good job, only fair, or a poor job?", and the answers are "Good", "Only fair", "Poor", "I don't know", and "N/A". In light of this, I transform the series following Li and Li (2014). First, I delete "N/A" responses. To calculate the standard deviation of beliefs, I construct a negative Herfindahl index, so that higher values indicate higher dispersion of opinion. To calculate average beliefs, I discard "I don't know" responses, and impose a (−1, 1) domain for the answers (positive = 1, neutral = 0, negative = -1).

[9] The Appendix includes a brief description of the main variables for easy reference.

Table 1
Summary statistics across Democratic and Republican presidents.

Variable	Full sample		Democrats		Republicans		D-R
	Mean	SD	Mean	SD	Mean	SD	Mean
Panel A. Financial variables							
$Rm(VW)$	0.009	0.043	0.011	0.040	0.006	0.045	0.005*
$Rm(EW)$	0.011	0.047	0.014	0.043	0.009	0.050	0.005
Rf	0.003	0.003	0.003	0.002	0.004	0.003	−0.001***
$Rm(VW) - Rf$	0.005	0.043	0.009	0.040	0.002	0.045	0.006**
$Rm(EW) - Rf$	0.008	0.047	0.011	0.043	0.005	0.051	0.006*
Panel B. Approval rating polls							
$Approve$	0.528	0.128	0.509	0.126	0.544	0.129	−0.035***
$Disapprove$	0.355	0.143	0.377	0.132	0.335	0.149	0.041***
$Neutral$	0.104	0.051	0.103	0.044	0.106	0.057	−0.003
ND	−0.173	0.266	−0.132	0.253	−0.209	0.272	0.077***
$PND(d)$	0.262	0.440	0.326	0.469	0.206	0.405	0.120***
PND	0.042	0.094	0.043	0.089	0.041	0.099	0.002
NND	−0.215	0.209	−0.175	0.203	−0.250	0.209	0.075***
Panel C. Political uncertainty indicators							
DG	0.618	0.486	0.375	0.485	0.833	0.373	−0.458***
ST	0.420	0.494	0.469	0.500	0.377	0.485	0.091***
EPU	101.899	42.824	101.627	44.139	102.154	41.668	−0.527
Panel D. Market-wide sentiment measures							
IS	0.000	1.000	−0.165	0.805	0.131	1.115	−0.296***
CS	86.747	11.849	88.438	13.304	85.471	10.455	2.967***
Panel E. Macroeconomic expectations							
$BEXPM$	0.084	0.138	0.064	0.122	0.101	0.149	−0.038***
$BEXPH$	−0.386	0.034	−0.391	0.036	−0.383	0.032	−0.008**
$GOVTM$	−0.090	0.219	−0.125	0.251	−0.059	0.180	−0.066***
$GOVTH$	−0.388	0.028	−0.396	0.024	−0.381	0.029	−0.015***
$RGDPM$	0.026	0.013	0.024	0.012	0.028	0.013	−0.005***
$RGDPS$	0.010	0.006	0.009	0.006	0.011	0.006	−0.002***
$INDPROM$	0.032	0.023	0.027	0.021	0.034	0.024	−0.007***
$INDPROS$	0.018	0.008	0.016	0.008	0.020	0.007	−0.004***

Average value (Mean) and standard deviation (SD) of the main variables in the sample. The data includes financial variables (Panel A), Gallup's approval rating polls (Panel B), political uncertainty indicators (Panel C), measures of market-wide sentiment (Panel D), and macroeconomic expectations (Panel E). The sample is further split into subsamples of Democratic and Republican presidencies, respectively, and the last column includes a t-test of the difference in means across political affiliations (*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$). The variables are defined in the Appendix.

presidential term, then jump to 1.4% in year 3, only to drop to 0.5% in year 4. The pattern is similar for equal-weighted and excess stock returns.

In Panel B, average monthly approval ratings start out at 58.3% in term-year 1, and decrease monotonically to 48.9% in term-year 4. Disapproval ratings follow the opposite pattern, starting at 27.8% in term-year 1, and monotonically increasing to 41.1% in term-year 4. The electorate then feels more positively about the president right after the election, a phenomenon known as the "honeymoon" effect (Mueller, 1970). As a result, net disapproval increases from −30.5% to −7.8% over the presidential term.

In Panel C, the incidence of divided government is higher in the last two years of the presidential term, which is in line with the idea that the electorate divides power as a tool to bring about moderation in the government's agenda. The index of economic policy uncertainty, on the other hand, is higher in the first and last year of the presidential term.

In Panel D, investor sentiment is positive in term-year 1, then decreases to negative values in term-years 2 and 3, and becomes positive and large in term-year 4, i.e., the year of presidential elections. Consumer sentiment also decreases in term-year 2 in a way similar to investor sentiment, but then takes on higher values in the second midterm.

In Panel E, households' expectations exhibit two interesting patterns. First, the business conditions forecasts become more pessimistic in term-years 2 and 3, and more optimistic in term-year 4, much like investor sentiment in Panel D. Second, the evaluations of the government's economic policy decline sharply and monotonically from term-year 1 to term-year 4, which seems to be a reflection of the honeymoon effect. On the other hand, the expectations of professional forecasters do not vary much across term-years.

4.1.3. Recessions and high disapproval periods

In Table 3, I present a third set of summary statistics with two additional breakdowns. First, I split the sample into NBER recession and expansion periods, which include 122 and 694 observations, respectively. Second, I analyze subsamples of positive and negative net disapproval, which include 214 and 602 observations, respectively.

Table 2
Summary statistics across presidential term-years.

	Year 1	Year 2	Year 3	Year 4	ρ
Panel A. Financial variables					
$Rm(VW)$	0.008	0.007	0.014	0.005	0.074**
$Rm(EW)$	0.011	0.010	0.016	0.008	0.093***
Rf	0.004	0.003	0.003	0.003	0.973***
$Rm(VW) - Rf$	0.004	0.004	0.011	0.002	0.081**
$Rm(EW) - Rf$	0.007	0.007	0.012	0.005	0.098***
Panel B. Approval rating polls					
$Approve$	0.583	0.526	0.501	0.489	0.921***
$Disapprove$	0.278	0.358	0.390	0.411	0.918***
$Neutral$	0.126	0.103	0.097	0.087	0.756***
ND	−0.305	−0.168	−0.111	−0.078	0.925***
$PND(d)$	0.127	0.277	0.318	0.356	0.770***
PND	0.013	0.037	0.056	0.069	0.912***
NND	−0.318	−0.205	−0.167	−0.147	0.917***
Panel C. Political uncertainty indicators					
DG	0.474	0.484	0.579	0.667	0.973***
ST	0.421	0.427	0.431	0.400	0.894***
EPU	105.029	102.930	94.786	105.273	0.806***
Panel D. Market-wide sentiment measures					
IS	0.091	−0.175	−0.139	0.258	0.982***
CS	86.354	85.051	87.704	88.334	0.963***
Panel E. Macroeconomic expectations					
$BEXPM$	0.091	0.070	0.074	0.102	0.882***
$BEXPH$	−0.380	−0.388	−0.395	−0.381	0.810***
$GOVTM$	−0.042	−0.082	−0.110	−0.125	0.964***
$GOVTH$	−0.380	−0.387	−0.388	−0.397	0.697***
$RGDPM$	0.025	0.027	0.028	0.027	0.983***
$RGDPS$	0.011	0.011	0.009	0.010	0.968***
$INDPROM$	0.027	0.034	0.034	0.032	0.978***
$INDPROS$	0.019	0.018	0.017	0.018	0.972***

Average value of the main variables in the sample, estimated in subsamples of presidential term-years 1 to 4. The last column reports the autocorrelation coefficient for each variable (*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$). The data includes financial variables (Panel A), Gallup's approval rating polls (Panel B), political uncertainty indicators (Panel C), measures of market-wide sentiment (Panel D), and macroeconomic expectations (Panel E). The variables are defined in the Appendix.

In Panel A, the average monthly returns on the value-weighted stock market portfolio vary substantially over the business cycle, averaging 0.2% during recessions and 1.0% during expansions. The pattern is similar for equal-weighted and excess stock returns. On the other hand, average stock returns do not exhibit much variation across periods of high and low net disapproval.

In Panel B, approval and disapproval ratings do not vary significantly with the business cycle. When breaking down net disapproval into a positive and a negative component, however, positive net disapproval is significantly higher during recessions (3.2%). During high net disapproval periods, approval ratings drop by 21.2%, whereas disapproval ratings increase by 23.9%. Overall, the two effects bring about an increase in net disapproval of 45.1%.

In Panel C, the incidence of divided government and the index of economic policy uncertainty both increase during recessions, whereas there is no significant association between presidential second terms and the state of the economy. On the other hand, periods of positive net disapproval exhibit negative correlation with divided government, positive correlation with presidential second terms, and no correlation with the index of economic policy uncertainty.

In Panel D, investor sentiment is seemingly unrelated to the business cycle or presidential popularity. This is in sharp contrast with the pattern of consumer sentiment, and also with the expectations of households and professional forecasters in Panel E, which are all significantly lower during recessions and in periods of high net disapproval. The latter set of correlations provides support to the idea that net disapproval identifies pessimistic beliefs.[10]

Altogether, the summary statistics indicate that presidential affiliation, term-years, and the state of the economy are important dimensions to take into account in the empirical tests below.

[10] I obtain a similar empirical pattern when considering net disapproval as a continuous variable rather than a dummy. Specifically, net disapproval exhibits negative and highly significant correlation with both investor and consumer sentiment (−0.128 and −0.448, respectively), the average 12-month business conditions forecast (−0.340), the average economic policy evaluation (−0.615), and the average RGDP growth forecast (−0.108), whereas the coefficient is negative but not significant for the average industrial production index forecast (−0.029).

Table 3
Summary statistics during recessions and high-disapproval periods.

	Recessions	Expansions	Difference	$ND > 0$	$ND < 0$	Difference
Panel A. Financial variables						
$Rm(VW)$	0.002	0.010	−0.008*	0.010	0.009	0.001
$Rm(EW)$	0.007	0.012	−0.005	0.013	0.011	0.002
Rf	0.004	0.003	0.001***	0.003	0.004	0.000
$Rm(VW) - Rf$	−0.002	0.007	−0.008**	0.006	0.005	0.001
$Rm(EW) - Rf$	0.003	0.009	−0.006	0.010	0.007	0.002
Panel B. Approval rating polls						
$Approve$	0.518	0.529	−0.012	0.372	0.583	−0.212***
$Disapprove$	0.354	0.355	−0.001	0.532	0.292	0.239***
$Neutral$	0.114	0.103	0.011**	0.087	0.111	−0.024***
ND	−0.164	−0.174	0.01	0.160	−0.291	0.451***
$PND(d)$	0.287	0.258	0.029	1.000	0.000	1.000
PND	0.069	0.037	0.032***	0.160	0.000	0.160***
NND	−0.233	−0.211	−0.022	0.000	−0.291	0.291***
Panel C. Political uncertainty indicators						
DG	0.721	0.513	0.208***	0.537	0.646	−0.109***
ST	0.377	0.428	−0.051	0.617	0.351	0.266***
EPU	142.756	97.789	44.967***	101.963	101.871	0.092
Panel D. Market-wide sentiment measures						
IS	0.057	−0.009	0.066	−0.060	0.024	−0.084
CS	73.231	89.066	−15.835***	78.235	89.379	−11.143***
Panel E. Macroeconomic expectations						
$BEXPM$	0.011	0.094	−0.083***	0.015	0.116	−0.101***
$BEXPH$	−0.347	−0.392	0.045***	−0.377	−0.391	0.014***
$GOVTM$	−0.164	−0.080	−0.085***	−0.276	−0.003	−0.272***
$GOVTH$	−0.387	−0.388	0.001	−0.393	−0.385	−0.008***
$RGDPM$	0.011	0.029	−0.018***	0.022	0.028	−0.006***
$RGDPS$	0.014	0.009	0.005***	0.010	0.010	−0.001
$INDPROM$	0.006	0.036	−0.030***	0.026	0.034	−0.008***
$INDPROS$	0.023	0.017	0.006***	0.017	0.019	−0.001*

Average value of the main variables in the sample, estimated over periods of NBER economic recessions and expansions, and periods of positive and negative net disapproval over the U.S. president's job, along with a t-test of the difference in means between these periods (*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$). The data includes financial variables (Panel A), Gallup's approval rating polls (Panel B), political uncertainty indicators (Panel C), measures of market-wide sentiment (Panel D), and macroeconomic expectations (Panel E). The variables are defined in the Appendix.

4.2. Time series tests

4.2.1. Net disapproval and stock returns

To test Hypothesis 1, I estimate the following predictive regression:

$$y_{t+1} = \beta_1 PND_t + \beta_2 NND_t + \beta_3 PND_t(d) + \beta_4 NND_t(d) + \gamma' X_t + \epsilon_{t+1}, \quad (1)$$

where y_{t+1} is defined as one-month-ahead value-weighted excess returns on the stock market portfolio, PND_t is positive net disapproval, NND_t is negative net disapproval, $PND_t(d)$ is the positive net disapproval dummy, $NND_t(d)$ is the negative net disapproval dummy, and X_t is a vector that includes the economic, financial, and political controls introduced above. The reason for the inclusion of such a large set of controls is that they represent potential determinants of both future returns and current approval ratings. To rule out the possibility that the results may be jointly driven by one or more omitted variables, I purge net disapproval and stock returns from the effect of such variables exploiting the Frisch–Waugh–Lovell theorem. Standard errors are robust to autocorrelation and heteroskedasticity. Hypothesis 1 implies $\beta_1 < 0$ and $\beta_2 = 0$.

As a preliminary analysis, I estimate a restricted version of Eq. (1) using net disapproval as the main independent variable, without subdividing it into positive and negative components.[11] The results are in Table 4, column (1). The coefficient of interest is close to zero in both magnitude and significance. In column (2), I estimate the unrestricted version of Eq. (1). The results show that the coefficient of net disapproval hides an important time series pattern. The effect of positive net disapproval on one-step-ahead excess stock returns is negative and highly significant, whereas the coefficient is not significant for negative net disapproval. Specifically, a 1% increase in positive net disapproval is followed by an 11 bps decrease in excess stock returns.

[11] Note that this specification imposes the restrictions $\beta_1 = \beta_2$, and $\beta_3 = \beta_4 = 0$.

Table 4
Predictive model for excess stock returns with net disapproval.

	(1)	(2)	(3)	(4)	(5)	(6)
ND	−0.0051					
	(−0.64)					
PND		−0.1105***	−0.1221***	−0.1324***	−0.1409***	−0.1420***
		(−3.41)	(−3.75)	(−3.38)	(−3.83)	(−4.03)
NND		0.0085	0.0085	0.0101	0.0109	0.0107
		(0.92)	(1.02)	(1.06)	(1.01)	(0.98)
$PND(d)$		0.0053	0.0038	0.0109	0.0098	0.0099
		(0.47)	(0.34)	(1.13)	(0.99)	(0.99)
$NND(d)$		−0.0100	−0.0106	−0.0046	−0.0063	−0.0062
		(−0.99)	(−1.07)	(−0.51)	(−0.70)	(−0.68)
Economic controls (SCV)	Y	Y	Y	Y	Y	Y
Financial controls	Y	Y	Y	Y	Y	Y
Political controls	Y	Y	Y	Y	Y	Y
Economic controls (CRR)	N	N	Y	Y	Y	Y
Time dummies	N	N	N	Y	Y	Y
Returns lags	N	N	N	N	Y	Y
NBER and employment	N	N	N	N	N	Y
Observations	815	815	815	815	803	803
Adj. R-squared	0.03	0.06	0.08	0.08	0.09	0.09

OLS predictive regressions of one-month-ahead value-weighted excess returns on the stock market portfolio ($Rm(VW)-Rf$) on net disapproval ratings (ND), positive net disapproval (PND), negative net disapproval (NND), a positive net disapproval dummy ($PND(d)$), a negative net disapproval dummy ($NND(d)$), macroeconomic variables from Santa-Clara and Valkanov (2003) (SCV) and Chen et al. (1986) (CRR), financial controls, political indicators, a set of time dummies for the online trading era, tech bubble, subprime crisis, and U.S. wars, various lags of cumulative returns, the NBER recession indicator, and employment growth. All the variables are described in the text. For easy reference, the Appendix includes a brief description of the dependent variable and the main independent variables. Heteroskedasticity and autocorrelation-robust t-statistics are reported in parentheses (*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$).

The results are robust to a number of additional sets of controls. First, I add Chen et al.'s (1986) macroeconomic indicators (column (3)). These variables includes the log-change in the industrial production index; unexpected inflation and the change in expected inflation, defined as in Fama and Gibbons (1984); the term spread, defined as the difference between the 20-year and the one-year yield on Treasury bonds; and the default spread, defined as above, and thus in common with Santa-Clara and Vallkanov (2003).

Second, I control for potential structural breaks related to special time periods (column (4)). To this end, I add a set of dummy variables for the online trading era (Itzkowitz et al., 2016), the tech bubble, the subprime crisis, and U.S. involvement in military conflicts, whose list includes the Korean War (1950–1953), the Bay of Pigs incident (1961), the Vietnam war[12] (1964), the Falklands war[13] and rebel support in Central and South America (1982), the Gulf War (1990), the Kosovo War (1999), the Afghan conflict (2001), and the Iraqi occupation (2003).

Third, I introduce additional lags of the dependent variable to address the concern that the results may partly reflect feedback effects from past excess stock returns to positive net disapproval (column (5)). In the spirit of Brennan et al. (1998), I consider cumulative excess returns over months $t-3$ through $t-2$, months $t-6$ through $t-4$, and months $t-12$ through $t-7$. Finally, I introduce the NBER recession indicator and employment growth (column (6)), as these two widely-publicized variables might be particularly salient to Gallup respondents. The results are robust to these additional specifications, and lend support to Hypothesis 1.

4.2.2. Political uncertainty

To test Hypothesis 2, I estimate the following equation:

$$y_{t+1} = \beta_1 PND_t + \beta_2 NND_t + \beta_3 PND_t(d) + \beta_4 NND_t(d) + \\ + \beta_5 PU_t + \beta_6 PU_t \times PND_t + \gamma' X_t + \epsilon_{t+1}, \tag{2}$$

[12] In response to the Gulf of Tonkin Incident, on August 10, 1964, the U.S. enacted The Gulf of Tonkin Resolution, or Southeast Asia Resolution (Pub.L. 88–408, 78 Stat. 384). The resolution authorized the President to do whatever necessary to assist "any member or protocol state of the Southeast Asia Collective Defense Treaty", including the use of armed forces.

[13] In 1982, the U.S. Congress passed resolutions in support of the United Kingdom (Grimmett, Richard F. (June 1, 1999). "Foreign Policy Roles of the President and Congress"; U.S. Department of State), providing military equipment ranging from submarine detectors to the latest missiles (Caspar Weinberger, "In the Arena: A Memoir of the Twentieth Century", with Gretchen Roberts; Washington, DC: Regnery, 2001, 374).

Table 5
Predictive model for excess stock returns with net disapproval and political uncertainty.

	Divided government		Second term		EPU index	
	(1)	(2)	(3)	(4)	(5)	(6)
PND	−0.1117***	−0.0617***	−0.1154***	−0.0434	−0.1103**	0.0638
	(−3.71)	(−2.89)	(−3.52)	(−1.12)	(−2.11)	(0.91)
PU	−0.0065	−0.0034	0.0029	0.0049	0.0001**	0.0002***
	(−1.26)	(−0.67)	(0.95)	(1.44)	(2.12)	(3.50)
$PU \times PND$		−0.0861***		−0.0742**		−0.0015***
		(−2.90)		(−2.24)		(−5.36)
Economic controls	Y	Y	Y	Y	Y	Y
Financial controls	Y	Y	Y	Y	Y	Y
Political controls	Y	Y	Y	Y	Y	Y
Observations	815	815	815	815	371	371
Adj. R-squared	0.06	0.07	0.06	0.06	0.05	0.07

OLS predictive regressions of one-month-ahead value-weighted excess returns on the stock market portfolio ($Rm(VW) - Rf$) on positive net disapproval (PND), political uncertainty indicators (PU), an interaction term between political uncertainty and positive net disapproval ($PU \times PND$), negative net disapproval (NND), a positive net disapproval dummy ($PND(d)$), a negative net disapproval dummy ($NND(d)$), economic controls from Santa-Clara and Valkanov (2003), financial controls, and political indicators. Political uncertainty is alternatively defined as a dummy variable for divided government (DG), a dummy variable for presidential second terms (ST), or the index of economic policy uncertainty (EPU) from Baker et al. (2016). All the variables are described in the text. For easy reference, the Appendix includes a brief description of the dependent variable and the main independent variables. Heteroskedasticity and autocorrelation-robust t-statistics are reported in parentheses (*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$).

where PU_t is political uncertainty, alternatively defined as the divided government dummy, the dummy for presidential second terms, or the index of economic policy uncertainty; $PU_t \times PND_t$ is an interaction term between political uncertainty and positive net disapproval, and the other variables are defined as above. Hypothesis 2 implies $\beta_6 < 0$.

First, I estimate a restricted version of Eq. (2) to allay the concern that positive net disapproval may capture at least in part political uncertainty itself. To this end, I impose $\beta_6 = 0$. The results are in Table 5, columns (1), (3), and (5). Reassuringly, I find that the coefficient of positive net disapproval is negative and highly significant in all three specifications. Interestingly, the coefficient of the index of economic policy uncertainty is positive and significant, which is consistent with the idea that political uncertainty should command a risk premium (Pástor and Veronesi, 2012, 2013; Brogaard and Detzel, 2015; Kelly et al., 2016).

Then, I estimate the unrestricted version of Eq. (2). The results are in Table 5, columns (2), (4), and (6). Consistent with Hypothesis 2, I find that the effect of positive net disapproval on stock returns is significantly stronger when uncertainty is high. Specifically, it increases in absolute value by 9 bps under divided government, 7 bps under presidential second terms, and 6 bps following a one-standard-deviation increase in the index of economic policy uncertainty.

This empirical pattern is consistent with the idea that dispersed beliefs make the stock overpricing more severe.

4.2.3. Market-wide sentiment

To test Hypothesis 3, I estimate the following equation:

$$y_{t+1} = \beta_1 PND_t + \beta_2 NND_t + \beta_3 PND_t(d) + \beta_4 NND_t(d) + \\ + \beta_5 S_t + \beta_6 S_t \times PND_t + \gamma' X_t + \epsilon_{t+1}, \tag{3}$$

where S_t is either investor or consumer sentiment, $S_t \times PND_t$ is an interaction term between sentiment and positive net disapproval, and the other variables are defined as above. Hypothesis 3 implies $\beta_6 > 0$.

Again, I first estimate a restricted version of Eq. (3) by imposing $\beta_6 = 0$, to address the concern that positive net disapproval may capture market-wide sentiment to some extent. The results are in Table 6, Panel A, columns (1) and (3). I find that the coefficient of positive net disapproval is negative and highly significant in both specifications, and thus robust to the inclusion of sentiment.

Next, I estimate the unrestricted version of Eq. (3). The results are in columns (2) and (4). Consistent with Hypothesis 3, I find that the effect of positive net disapproval on stock returns is significantly weaker when sentiment is high. To get a sense of the magnitude, a one-standard-deviation increase in investor sentiment weakens the relation between positive net disapproval and one-step-ahead stock returns by 7 bps. For consumer sentiment, the magnitude of the effect is 5 bps.

As an additional specification, I re-estimate the test equation by expressing sentiment as a dummy variable that takes on a value of one if sentiment is below its median value in a given month, and zero otherwise. The results are in Table 6, Panel B. The coefficient of the interaction term between positive net disapproval and the low sentiment dummy is negative and significant. Specifically, the effect of positive net disapproval on stock returns is concentrated in times of low investor and consumer sentiment.

Overall, this empirical pattern is consistent with the prediction that when the distribution of beliefs shifts to the left, only the most optimistic investors continue to trade. It also lends further support to the idea that high presidential disapproval reflects a negative evaluation of the president's handling of the economy.

Table 6
Predictive model for excess stock returns with net disapproval and sentiment.

Panel A				
	Investor sentiment		Consumer sentiment	
	(1)	(2)	(3)	(4)
PND	−0.1416***	−0.1187***	−0.1254***	−0.3930***
	(−3.34)	(−2.81)	(−3.07)	(−4.01)
Sentiment	−0.0023	−0.0036*	0.0000	−0.0001
	(−1.27)	(−1.81)	(0.02)	(−0.65)
$PND \times Sentiment$		0.0715***		0.0038***
		(4.03)		(2.98)
Economic controls	Y	Y	Y	Y
Financial controls	Y	Y	Y	Y
Political controls	Y	Y	Y	Y
Observations	603	603	757	757
Adj. R-squared	0.06	0.07	0.06	0.06
Panel B				
	Investor sentiment		Consumer sentiment	
	(1)	(2)	(3)	(4)
PND	−0.1346***	−0.0664*	−0.1266***	−0.0363
	(−3.26)	(−1.70)	(−3.22)	(−0.97)
Low sentiment	0.0003	0.0044	0.0009	0.0027
	(0.09)	(1.08)	(0.25)	(0.65)
$PND \times Low\ sentiment$		−0.1149***		−0.0933***
		(−2.78)		(−2.92)
Economic controls	Y	Y	Y	Y
Financial controls	Y	Y	Y	Y
Political controls	Y	Y	Y	Y
Observations	603	603	757	757
Adj. R-squared	0.05	0.07	0.06	0.06

OLS predictive regressions of one-month-ahead value-weighted excess returns on the stock market portfolio ($Rm(VW) - Rf$) on positive net disapproval (PND), sentiment indicators, an interaction term between sentiment and positive net disapproval, negative net disapproval (NND), a positive net disapproval dummy ($PND(d)$), a negative net disapproval dummy ($NND(d)$), economic controls from Santa-Clara and Valkanov (2003), financial controls, and political indicators. Sentiment is alternatively defined as Baker and Wurgler's (2007) investor sentiment index (IS), orthogonalized to business cycle indicators, or the University of Michigan consumer sentiment index (CS). In the specifications from Panel B, both sentiment measures are expressed as dummy variables that take on a value of one if sentiment is below its median value, and zero otherwise. All the variables are described in the text. For easy reference, the Appendix includes a brief description of the dependent variable and the main independent variables. Heteroskedasticity and autocorrelation-robust t-statistics are reported in parentheses (*$p < 0.10$, **$p < 0.05$, *** $p < 0.01$).

4.3. Additional tests

4.3.1. Sensitivity analysis

My breakdown of net disapproval into a positive and a negative component is based on a threshold of zero. In the next group of tests, I analyze how the estimates of Eq. (1) vary when using nonzero thresholds. To this end, I consider the instance in which the difference between disapproval and approval ratings progressively clears the following cutoff points: −15%, −10%, −5%, 5%, 10%, and 15%, respectively.[14]

The estimates are in Table 7, Panel A. The effect of positive net disapproval on excess stock returns is not significant for the −15% threshold, but monotonically increases in magnitude and significance for the other thresholds. In particular, a 1% increase in positive net disapproval is followed by a decrease in excess stock returns of 5 bps for the −10% threshold, 9 bps for the −5% threshold, 16 bps for the 5% threshold, 23 bps for the 10% threshold, and 31 bps for the 15% threshold.

This pattern suggests that larger threshold values identify progressively lower levels of participation of pessimistic investors, and thus larger overpricing of stocks.

[14] For each of these six thresholds, the number of nonzero values that positive net disapproval takes on is respectively 388, 342, 280, 168, 111, and 93.

Table 7
Predictive model for excess stock returns with net disapproval: Additional tests.

Panel A						
	(1)	(2)	(3)	(4)	(5)	(6)
	−15%	−10%	−5%	5%	10%	15%
PND	−0.0300	−0.0506**	−0.0929***	−0.1566***	−0.2300***	−0.3108***
	(−1.38)	(−2.02)	(−3.40)	(−4.23)	(−4.15)	(−3.47)
NND	0.0113	0.0040	−0.0008	0.0069	0.0065	0.0063
	(0.75)	(0.30)	(−0.07)	(0.76)	(0.74)	(0.72)
Controls	Y	Y	Y	Y	Y	Y
Observations	815	815	815	815	815	815
Adj. R-squared	0.04	0.05	0.06	0.07	0.08	0.08
Panel B						
	(1)	(2)	(3)	(4)	(5)	(6)
	EW	No $PND(d)$	No $NND(d)$	Median	Q1	Q3
PND	−0.1163***	−0.1105***	−0.1105***	−0.0910***	−0.1048***	−0.0646**
	(−3.15)	(−3.55)	(−3.73)	(−2.68)	(−2.74)	(−2.52)
NND	0.0127	0.0085	0.0085	0.0102	0.0099	0.0086
	(1.23)	(0.92)	(0.80)	(0.76)	(0.65)	(0.85)
Controls	Y	Y	Y	Y	Y	Y
Observations	815	815	815	815	815	815
Adj. R-squared	0.07	0.03	0.05	0.03	0.05	0.05
Panel C						
	(1)	(2)	(3)	(4)	(5)	(6)
	1948–1971	1972–1995	1996–2015	Full	Full	Full
PND	−0.0797***	−0.1393**	−0.1489***	−0.1154***	−0.1119***	−0.1112***
	(−3.04)	(−2.18)	(−2.73)	(−3.60)	(−3.54)	(−3.48)
NND	0.0053	−0.0002	−0.0359	0.0093	0.0073	0.0090
	(0.21)	(−0.01)	(−1.06)	(1.02)	(0.79)	(0.96)
Controls	Y	Y	Y	Y	Y	Y
Month FE	N	N	N	Y	N	N
Month ×NBER FE	N	N	N	N	Y	N
Month ×Democrat FE	N	N	N	N	N	Y
Observations	288	288	239	815	815	815
Adj. R-squared	0.06	0.04	0.14	0.07	0.07	0.06

OLS predictive regressions of one-month-ahead value-weighted excess returns on the stock market portfolio ($Rm(VW)-Rf$) on positive net disapproval (PND), negative net disapproval (NND), a positive net disapproval dummy ($PND(d)$), a negative net disapproval dummy ($NND(d)$), economic controls from Santa-Clara and Valkanov (2003), financial controls, and political indicators. In the regressions for Panel A, the threshold for net disapproval is -15% in column (1), -10% in column (2), -5% in column (3), 5% in column (4), 10% in column (5), and 15% in column (6), whereas the threshold is zero elsewhere. In the regressions for Panel B, column (1), I define the dependent variable as one-month-ahead equal-weighted excess returns on the stock market portfolio ($Rm(EW)-Rf$). In the other specifications, I respectively exclude the positive and negative net disapproval dummies (columns (2) and (3)), and estimate quantile regressions for the first quartile, the median, and the third quartile (columns (4) to (6)). In the regressions for Panel C, I split the full sample into three subperiods (columns (1) to (3)), and respectively add calendar-month fixed effects, calendar-month times the NBER recession indicator fixed effects, and calendar-month times the presidential affiliation dummy fixed effects (columns (4) to (6)). All the variables are described in the text. For easy reference, the Appendix includes a brief description of the dependent variables and the main independent variables. Heteroskedasticity and autocorrelation-robust t-statistics are reported in parentheses (*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$).

4.3.2. Alternative specifications

In the empirical tests so far, I have constructed the dependent variable using value-weighted returns. As a robustness check, I repeat the analysis using equal-weighted CRSP returns. The estimates of Eq. (1) are in Table 7, Panel B, column (1). The results are similar to those from the value-weighted regressions in both magnitude and significance. In unreported analyses, I also find similar estimates for Eq. (2) and Eq. (3).

A potential concern is that the high correlation between the net disapproval variables and their dummies may distort the results in some ways. To address this issue, I re-estimate Eq. (1) by progressively excluding the positive and negative net disapproval dummies, respectively. The results, in columns (2) and (3), are virtually unchanged. In unreported tests, the estimates are also similar when including positive or negative net disapproval separately and without the associated dummy variable.

To assess the potential effect of outliers on the estimates, I perform quantile regressions. Specifically, I re-estimate Eq. (1) for the median, first quartile, and third quartile of the excess returns distribution. The results are in columns (4) to (6). I find again that the coefficient of positive net disapproval is negative and highly significant in all three specifications. I also find that the coefficients for the first and third quartile of the distribution are not significantly different from each other.

4.3.3. Addressing data-snooping concerns

To further address potential data-snooping concerns, I proceed in two ways. First, I analyze whether the results are confined to some particular period. To this end, I re-estimate Eq. (1) in three subperiods: 1948–1971, 1972–1995, and 1996–2015. The choice of the start and end dates for each subsample satisfy two conditions: the subsamples are of similar size, and do not cut through spike events in positive net disapproval.[15]

The estimates are in Table 7, Panel C, columns (1) to (3). I find that the coefficient of positive net disapproval is positive and significant in all three subsamples, and increases in magnitude over time. This pattern is consistent with the idea that the larger communication networks that characterize modern times tend to amplify political disagreement (Dalton et al., 1984; Levine et al., 1997), especially through social media (e.g., Sunstein (2017) for an excellent discussion).

As an additional analysis, I also use the last five years of data (2016–2020) to test whether the results hold out of sample. I find that the coefficient of interest is not significant (unreported). This result is probably due to the short time series, which reduces the statistical power of the test, but might also reflect the fact that the last administration was an outlier in terms of popularity. Net disapproval was positive during 94% of the last presidential term, whereas in previous administrations this number was only 26% on average.

Second, I acknowledge that the analysis uses a number of alternative empirical specifications for the main independent variable, including net disapproval, positive and negative net disapproval, and net disapproval measures that clear six alternative nonzero thresholds (see Table 4, and Table 7, Panel A). One concern is that the results might then include some spurious positives. To address this issue, I propose a conservative Bonferroni correction to interpret the statistical significance of the empirical estimates.

With nearly ten different specifications, the correction implies that the threshold for 1% significance should be about 0.1% in each of the aforementioned tests. Reassuringly, I find that the coefficient of positive net disapproval clears this threshold all throughout, with the only exception being the -10% cutoff point in the sensitivity analysis.[16]

4.3.4. Fixed effects

Another concern is that the results may reflect macroeconomic news to some extent. Since the Bureau of Economic Analysis makes multiple macroeconomic announcements that span virtually all calendar months, I re-estimate Eq. (1) with calendar-month fixed effects as an additional set of controls. The estimates, reported in Table 7, Panel C, column (4), are virtually unchanged.

Since macroeconomic announcements may have a larger impact during economic downturns, I include an additional specification with calendar-month times the NBER recession indicator fixed effects. Finally, I also consider the possibility that Democrats may surprise markets with their economic policies (Santa-Clara and Valkanov, 2003). Therefore, I consider calendar-month times the presidential affiliation dummy fixed effects. The estimates, respectively reported in columns (5) and (6), are again similar.

4.3.5. Alternative economic beliefs

The information embedded in Gallup's polls is primarily of political nature, but nonetheless may also partly reflect other types of personal or professional economic beliefs (e.g., Lewis-Beck and Stegmaier, 2000). Since net disapproval exhibits significant correlation with a number of measures of macroeconomic expectations (see Table 3, Panel E), this seems to be an especially relevant concern.

To address this issue, I set up a horse race by augmenting Eq. (1) with these additional variables. Specifically, I introduce the first and second moments of the belief distribution of the 12-month business conditions forecast (column (1)), the evaluation of government economic policy (column (2)), the forecast of the real gross national product (column (3)), and the forecast of the industrial production index (column (4)).

The results are in Table 8. Reassuringly, I find that the effect of positive net disapproval on one-month-ahead excess stock returns is negative and highly significant in all specifications. In unreported tests, I find similar results when including all these additional variables simultaneously.

4.3.6. IV regressions

Another potential concern is that despite the large number of controls, reverse causality may still play a role to some extent. To address this point, I estimate instrumental variable (IV) regressions. Specifically, I analyze the impact of U.S. mass shootings on presidential popularity and stock returns.

The mechanism works as follows. Previous studies show that the fear caused by terrorist attacks temporarily creates undue pessimism in economic expectations (e.g., Lenain et al., 2002; Becker and Rubinstein, 2011; Brodeur, 2018).[17] Lagerborg et al. (2020) report a similar finding when considering U.S. mass shootings as a particular type of terrorist attack. In line with the above

[15] These events take place in years 1948, 1950–1952, and 1967–1968 for the first subsample; years 1973–1975, 1979–1980, 1982–1983, and 1992–1994 for the second subsample; and years 2005–2008 and 2011–2015 for the third subsample. The results that follow are similar when considering subsamples of exactly equal size, and when starting the third subsample in year 2000, which roughly coincides with the advent of online social networks and online trading.

[16] Specifically, the *p*-values are 0.0007, 0.0002, 0.0007, 0.0001, and 0.0001 in Table 4, columns (2) to (6), and 0.0431, 0.0007, 0.0000, 0.0000, and 0.0005 in Table 7, Panel A, columns (2) to (6). In both tables, the coefficient of interest in column (1) was already not significant before the correction.

[17] For example, fear can be thought of as the degree to which subjective beliefs about the frequency and magnitude of rare events (in this case, terrorist attacks) deviate from objective assessments of risk. See, for example, Kahneman and Tversky (1973, 1979)) and Tversky and Kahneman (1974) for a general description of the bias, and Becker and Rubinstein (2011) for its relation to terrorism. For more on fear and economic behavior, see, for example, Loewenstein (2000).

Table 8
Predictive model for excess stock returns with net disapproval and alternative measures of economic beliefs.

	(1) $BEXP$	(2) $GOVT$	(3) $RGDP$	(4) $INDPROD$
PND	−0.1078**	−0.0967**	−0.1336***	−0.1369***
	(−2.19)	(−2.19)	(−2.92)	(−3.06)
NND	0.0040	0.0020	0.0202	0.0176
	(0.22)	(0.11)	(1.20)	(1.21)
$PND(d)$	0.0116	0.0326	0.0100	0.0131
	(0.29)	(0.85)	(0.57)	(0.75)
$NND(d)$	−0.0024	0.0189	−0.0051	−0.0024
	(−0.06)	(0.50)	(−0.29)	(−0.14)
First moment	−0.0189	−0.0071	0.0025	−0.0800
	(−1.19)	(−0.47)	(0.01)	(−0.84)
Second moment	−0.0009	0.0549	−1.3239***	−0.8071*
	(−0.01)	(0.59)	(−2.98)	(−1.74)
Economic controls	Y	Y	Y	Y
Financial controls	Y	Y	Y	Y
Political controls	Y	Y	Y	Y
Observations	455	455	564	564
Adj. R-squared	0.03	0.03	0.06	0.06

OLS predictive regressions of one-month-ahead value-weighted excess returns on the stock market portfolio ($Rm(VW)-Rf$) on positive net disapproval (PND), negative net disapproval (NND), a positive net disapproval dummy ($PND(d)$), a negative net disapproval dummy ($NND(d)$), the first and second moments of the belief distribution of the 12-month business conditions forecast ($BEXP$, column (1)), the evaluation of government economic policy ($GOVT$, column (2)), the forecast of the real gross national product ($RGDP$, column (3)), and the forecast of the industrial production index ($INDPROD$, column (4)), economic controls from Santa-Clara and Valkanov (2003), financial controls, and political indicators. All the variables are described in the text. For easy reference, the Appendix includes a brief description of the dependent variable and the main independent variables. Heteroskedasticity and autocorrelation-robust t-statistics are reported in parentheses ($^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$).

literature, they find that mass shootings in the United States generate a temporary drop in U.S. consumer sentiment. The specific channel they highlight is the nationwide media coverage that mass shootings receive, as the news constitutes an important source of sentiment and attention (e.g., Buckman et al., 2020).[18]

Since presidential disapproval constitutes a form of economic sentiment, I hypothesize a similar relation between U.S. mass shootings and presidential disapproval. A negative shock to economic expectations induced by mass shootings should make part of the electorate more pessimistic over the president's handling of the economy.[19] In turn, investors that become more pessimistic should also engage in portfolio reallocations, for example by selling their stocks to optimists.

It is important to note that despite their nationwide resonance, mass shootings seem to be triggered by local rather than national factors, such as for example county-level economic inequality (Kwon and Cabrera, 2018, 2019). The intuition is that communities with high economic inequality generate anger and resentment (e.g., Merton, 1968, which in turn is more conducive to acts of violence (e.g., Daly, 2016). In light of these considerations, U.S. mass shootings should represent an economically relevant source of exogenous shocks to presidential disapproval.[20]

To identify U.S. mass shootings, I consider the data set from the Stanford Mass Shootings of America (MSA) data project, carried out by the Stanford Geospatial Center. It is the first aggregation effort of its kind, determined to create a comprehensive online data set on shooting incidents in America, with the aim of facilitating research on gun violence. The database starts in 1966 and includes 237 shooting incidents until the end of my sample period in 2015, spanning a sum total of 600 months. Since some of these incidents happened within the same month, the number of nonzero monthly observations is 145 data points. The proportion of nonzero data points is then 24% (= 145/600), and thus quite close to the 26% of positive net disapproval (= 214/816).

For each incident, I consider the following variables: the overall number of fatalities, the number of shooters, and whether one or more shooters had a known history of mental illness. The inclusion of the latter variable reflects the fact that mass shootings prompt calls to address untreated serious mental illness, which increases public outrage (Hirschtritt and Binder, 2018). In unreported

[18] They also point out that data on mass shootings is more suitable for the empirical analysis than measures of media coverage, because the latter entails a substantial level of noise.

[19] Consistent with this view, recent studies report a plunge in government popularity in the wake of mass shootings (e.g., Smith, 2002; Wozniak, 2015; Newman and Hartman, 2017; Joslyn and Haider-Markel, 2018).

[20] In the analysis below, a formal Sargan–Hansen test also confirms the exogeneity of the instrument.

Table 9
Predictive model for excess stock returns with net disapproval: IV regressions.

	(1)	(2)	(3)	(4)	(5)	(6)
ND	−0.0006					
	(−0.42)					
PND		−0.0047**	−0.0043**	−0.0047**	−0.0046**	−0.0045**
		(−2.53)	(−2.07)	(−2.23)	(−2.22)	(−2.20)
NND		0.1288	0.1278	0.1231	0.1200	0.0979
		(0.90)	(0.93)	(0.90)	(0.89)	(0.75)
$PND(d)$		−0.0098	−0.0143	−0.0042	−0.0045	−0.0041
		(−1.05)	(−1.54)	(−0.46)	(−0.47)	(−0.43)
$NND(d)$		0.0263	0.0225	0.0307	0.0296	0.0218
		(0.48)	(0.42)	(0.58)	(0.57)	(0.43)
Economic controls (SCV)	Y	Y	Y	Y	Y	Y
Financial controls	Y	Y	Y	Y	Y	Y
Political controls	Y	Y	Y	Y	Y	Y
Economic controls (CRR)	N	N	Y	Y	Y	Y
Time dummies	N	N	N	Y	Y	Y
Returns lags	N	N	N	N	Y	Y
NBER and employment	N	N	N	N	N	Y
Observations	599	599	599	599	599	599
Adj. R-squared	0.03	0.04	0.06	0.06	0.06	0.07

Two-stage IV predictive regressions of one-month-ahead value-weighted excess returns on the stock market portfolio ($Rm(VW) - Rf$) on instrumented (and standardized) net disapproval ratings (ND), positive net disapproval (PND), negative net disapproval (NND), a positive net disapproval dummy ($PND(d)$), a negative net disapproval dummy ($NND(d)$), macroeconomic variables from Santa-Clara and Valkanov (2003) (SCV) and Chen et al. (1986) (CRR), financial controls, political indicators, a set of time dummies for the online trading era, tech bubble, subprime crisis, and U.S. wars, various lags of cumulative returns, the NBER recession indicator, and employment growth. This table shows the second-stage regressions. All the variables are described in the text, along with the construction of the instrument. For easy reference, the Appendix includes a brief description of the dependent variable and the main independent variables. Heteroskedasticity and autocorrelation-robust t-statistics are reported in parentheses ($^*p < 0.10$, $^{**}p < 0.05$, $^{***}\ p < 0.01$).

summary statistics, I find that the average number of monthly fatalities (excluding months with no incidents) is 7.5, with a median of 6, whereas the range is from 0 to 34. The number of shooters, on the other hand, has a mean of 1.8 and a median of 1, and the range is from 1 to 13. Also, the shooter(s) had a known history of mental illness in about half of the cases (56%).

As a preliminary test, I analyze the pairwise correlation coefficients between these three variables and presidential popularity. Consistent with the findings of previous research, I find that all three variables from the MSA data set exhibit positive and highly significant correlation with net disapproval (p-value < 0.01). Then I proceed to estimate two-stage IV regressions. In the first stage, I regress net disapproval on the shooting incident variables (with HAC standard errors), and define the predicted values from the regression as the instrument. To ease the interpretation of the subsequent tests, I standardize this variable (by subtracting its mean and dividing by its standard deviation) so that it exhibits zero mean and unit variance. In the second stage, I re-estimate the entire set of results from Table 4 replacing net disapproval with its instrument.

The estimates, presented in Table 9, follow the same empirical pattern as in Table 4. I find that positive net disapproval, defined as a variable that equals instrumented (and standardized) net disapproval when this variable is positive, and zero otherwise, is a negative predictor of one-step-ahead stock returns in all specifications. On the other hand, the coefficients are insignificant for negative net disapproval, and for the two dummy variables associated with positive and negative net disapproval.

The results suggest that the effect of positive net disapproval on stock returns seems to reflect genuine sentiment.

4.3.7. Unreported robustness checks

In residual unreported analyses, I formally test for the presence of feedback effects from excess stock returns to positive net disapproval. Following the VAR methodology from Rapach et al. (2013), I find that the effect of lagged net disapproval on excess stock returns is negative and significant for a variety of lag specifications, while the effect of lagged excess stock returns on net disapproval is largely outside the rejection region.

One concern is that the large and significant autocorrelation coefficient of positive net disapproval may bias the estimates from the regressions above. To address this issue, I apply Stambaugh's (1986) correction. Reassuringly, I find that the size of the bias is negligible, and equal to roughly 0.01% of the magnitude of the coefficient of positive net disapproval. Moreover, the t-statistic is substantially above the adjusted critical values for 5% significance levels.

Beck (1991) argues that the first month of each president's administration can exert a confounding effect, as it implies a transition of independent variables from one presidency to another. To allay this concern, I repeat the analysis excluding the first term-month of each administration. The results are again unchanged.

Table 10
Net disapproval and the presidential puzzle.

	(1)	(2)	(3)	(4)	(5)
Democrat	0.0077***	0.0057*	0.0033	0.0032	−0.0102**
	(2.67)	(1.65)	(0.89)	(0.74)	(−2.24)
PND		−0.1105***	−0.1341***	−0.0482	
		(−3.41)	(−3.82)	(−1.30)	
Democrat × *PND*			0.0662*	−0.0259	
			(1.74)	(−0.60)	
DG				−0.0030	−0.0191***
				(−0.68)	(−3.81)
PND × *DG*				−0.1046***	
				(−3.02)	
Democrat × *DG*					0.0274***
					(3.74)
Controls	Y	Y	Y	Y	Y
Observations	815	815	815	815	815
Adj. R-squared	0.03	0.06	0.06	0.07	0.04

OLS predictive regressions of one-month-ahead value-weighted excess returns on the stock market portfolio ($Rm(VW)-Rf$) on a dummy variable for Democratic presidents, positive net disapproval (PND), negative net disapproval (NND), a positive net disapproval dummy ($PND(d)$), a negative net disapproval dummy ($NND(d)$), a dummy variable for divided government (DG), economic controls from Santa-Clara and Valkanov (2003), financial controls, and political indicators. All the variables are described in the text. For easy reference, the Appendix includes a brief description of the dependent variable and the main independent variables. Heteroskedasticity and autocorrelation-robust t-statistics are reported in parentheses (*$p < 0.10$, **$p < 0.05$, *** $p < 0.01$).

Another potential issue is the presence of outliers. In 2008, George W. Bush had historically high net disapproval ratings, and the stock market had one of its worst years in the sample period. To test whether these extraordinary circumstances partly drive the results, I repeat the analysis by excluding year 2008. The estimates are unaffected. I also find similar results when excluding the bottom 5% of the distribution of excess stock returns from the analysis.

4.4. The presidential puzzle

It is well known that political agendas differ across presidential affiliations. Democrats have historically been more concerned with unemployment and Republicans with inflation, thus generating "rational partisan business cycles" (Alesina and Rosenthal, 1995). However, neither macroeconomic factors nor risk seem to explain the premium that stock returns earn under Democratic presidencies (Santa-Clara and Valkanov, 2003). In what follows, I shed new light on this issue.

The results in Table 1 show that the vast majority of term-months under Republican presidents are characterized by divided government (83%), while the incidence under Democrats is much lower (38%). Since voters tend to divide power between the two parties in an attempt to bring about moderate policies (Alesina and Rosenthal, 1995), these numbers seem to reflect the fact that Republican administrations have faced particularly tough and controversial issues in the postwar era (Blinder and Watson, 2016). Therefore, a simple dummy variable that captures the president's affiliation may actually proxy for divided government.

This story has three implications. First, the effect of positive net disapproval on stock returns should be significantly stronger under Republican presidencies. Second, the explanatory power of presidential affiliation as a moderating variable should be absorbed by divided government. Third, this mechanism should also explain away the direct effect of presidential affiliation on stock returns, i.e., Santa-Clara and Valkanov's (2003) presidential puzzle. To test these predictions, I set up a horse race between presidential affiliation and divided government.

I start the analysis by testing for the presence of a Democratic premium in my sample. The results are in Table 10, column (1). I find that monthly excess stock returns are significantly higher under Democratic presidents (0.77%, t-statistic = 2.67). This result mirrors the one from Santa-Clara and Valkanov (2003), with similar magnitude and significance, despite the fact that they use a slightly different sample period (from January 1927 to December 1998).[21]

Next, I introduce the net disapproval variables. The results are in column (2). The effect of positive net disapproval on stock returns is negative and highly significant (0.11%, t-statistic = −3.41). Interestingly, the coefficient of the Democratic dummy decreases sharply in both magnitude and significance (0.57%, t-statistic = 1.65). In column (3), I find that the effect of positive net disapproval on stock returns is weaker under Democratic presidencies, decreasing in absolute value by 6 bps (t-statistic = 1.74).

[21] In this paper, the sample period is constrained by the fact that approval ratings are only available for the postwar era.

Table 11
Net disapproval and the presidential puzzle: Size breakdown.

	(1) D1	(2) D10	(3) D1-D10	(4) D1	(5) D10	(6) D1-D10
Democrat	0.0132***	0.0068**	0.0064	0.0034	0.0039	−0.0005
	(2.99)	(2.28)	(1.51)	(0.72)	(0.90)	(−0.14)
PND				−0.1002**	−0.0341	−0.0662**
				(−2.31)	(−0.92)	(−1.99)
DG				−0.0184***	0.0003	−0.0187***
				(−3.85)	(0.07)	(−4.61)
$PND \times DG$				−0.0844**	−0.1048***	0.0204
				(−2.37)	(−2.99)	(0.65)
$PND \times Democrat$				−0.0486	−0.0264	−0.0222
				(−1.06)	(−0.61)	(−0.63)
Controls	Y	Y	Y	Y	Y	Y
Observations	815	815	815	815	815	815
Adj. R-squared	0.08	0.02	0.08	0.12	0.06	0.11

OLS predictive regressions of one-month-ahead value-weighted excess returns on bottom (D1) or top (D10) market capitalization decile portfolios on a dummy variable for Democratic presidents, positive net disapproval (PND), negative net disapproval (NND), a positive net disapproval dummy ($PND(d)$), a negative net disapproval dummy ($NND(d)$), a dummy variable for divided government (DG), economic controls from Santa-Clara and Valkanov (2003), financial controls, and political indicators. All the variables are described in the text. For easy reference, the Appendix includes a brief description of the main independent variables. Heteroskedasticity and autocorrelation-robust t-statistics are reported in parentheses ($^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$).

On the other hand, the coefficient of the standalone Democratic dummy is no longer significant and loses most of its magnitude (0.33%, t-statistic = 0.89).

Then I carry out the horse race with divided government. The estimates are in column (4). I find that the effect of positive net disapproval over stock returns is stronger under divided government, increasing in absolute value by 13 bps (t-statistic = −3.36). Notably, this effect takes away the explanatory power from the other coefficients of interest, including the standalone Democratic dummy (0.32%, t-statistic = 0.61). Following Santa-Clara and Valkanov (2003), I also re-estimate the t-statistics through nonparametric bootstrapping, by resampling observations from the data with replacement 10,000 times. The results, untabulated, are similar.

The findings lend further support to the idea that the stock overpricing created by pessimists leaving the market (when net disapproval is high) becomes even more pronounced in times of high uncertainty (when government is divided).[22] This mechanism seems to explain not only the presidential puzzle, but also the finding that Republican presidencies are associated with higher equity valuations (Snowberg et al., 2007a,b).

To dig deeper into the relation between the presidential puzzle and divided government, I also estimate an additional specification with an interaction term between the Democratic dummy and the divided government dummy, while leaving out all the net disapproval variables. The estimates are in column (5). Consistent with the previous set of results, I find that the Democratic premium in stock returns indeed only arises when government is divided.

Another interesting question is whether the results differ depending on whether it is the House of Representatives, the Senate, or both that are dominated by the other party. To this end, I re-estimate the regressions using these alternative definitions of divided government. The results, unreported for brevity, are similar across all three specifications, and analogous to the estimates from column (4). I also find the same empirical pattern when using equal-weighted returns as a dependent variable.

Finally, I look into the relation between the presidential puzzle and firm size. To this end, I repeat the analysis using excess returns on size decile portfolios as a dependent variable, constructed at the end of each June using the June market equity and NYSE breakpoints, and retrieved from Kenneth French's website. First, I estimate simple specifications that only include the presidential dummy. The results are in Table 11, columns (1) to (3). As in Santa-Clara and Valkanov (2003), I find that the Democratic premium decreases in magnitude and significance moving from small to large stocks.[23]

Next, I introduce the other variables of interest. The results are in columns (4) to (6). I find that the mechanism I propose also explains away the relation between the presidential puzzle and firm size, as the coefficient of the Democratic dummy loses its statistical significance (and most of its magnitude) in all specifications. Interestingly, the effect of positive net disapproval as a

[22] Consistent with this interpretation, positive net disapproval does not vary with the political affiliation of the president, whereas the incidence of divided government does (see Table 1).

[23] For the sake of brevity, I only show the results for the bottom and top size decile portfolios.

standalone variable is stronger among small stocks, which is consistent with the idea that sentiment mostly affects stocks that are harder to evaluate and/or arbitrage (Baker and Wurgler, 2006, 2007).

Santa-Clara and Valkanov (2003) and Blinder and Watson (2016) also compare the effect of presidential affiliation with that of congressional variables, and find that the former has a stronger explanatory power on stock returns and economic growth. By contrast, I consider government as a whole (including the president) rather than Congress alone, and focus on the conditional effect of these variables on the relation between net disapproval and stock returns.

Pástor and Veronesi (2020) also provide an explanation for the presidential puzzle. They are the first to propose a model that links political cycles with risk preferences, and show that time-varying risk aversion can shape election outcomes. When risk aversion is sufficiently high, agents prefer the safe income from government over the risky income from business ownership, so they vote for Democrats, the party of fiscal redistribution. When risk aversion is sufficiently low, they vote for Republicans, the party of less insurance and more business risk.

The link between positive net disapproval and stock prices provides an additional channel for their story. The higher risk that characterizes Republican administrations makes investor beliefs more dispersed, which amplifies the negative effect of positive net disapproval on stock returns.

4.5. Stock-level analysis

One potential concern is that the results might reflect some form of systematic risk not accounted for by macroeconomic variables, or some firm characteristics that affect stock returns in their own right. To address these issues, I perform a stock-level analysis of returns using the universe of stocks from CRSP-Compustat. Specifically, I estimate an augmented version of the Fama–MacBeth regressions from Edmans (2011):

$$R_{i,t} = \beta_0 + \beta_1 D_{i,t-1} + \delta' Z_{i,t-s} + \epsilon_{i,t}, \tag{4}$$

where $R_{i,t}$ is the excess return on stock i in month t; $D_{i,t-1}$ is a dummy variable that takes on a value of one if the stock has high sensitivity to beginning-of-month positive net disapproval, and zero otherwise; and $Z_{i,t-s}$ is a large vector of controls that includes firm characteristics (calculated over various lags) from Brennan et al. (1998), factor loadings, and idiosyncratic volatility.

I estimate stock-level sensitivity to positive net disapproval separately for each stock using a rolling 36-month window.[24] For each stock in any given month, I estimate a regression of excess stock returns on beginning-of-month positive net disapproval, negative net disapproval, the positive net disapproval dummy, and the negative net disapproval dummy. A stock is defined as highly sensitive if the coefficient of positive net disapproval from the rolling regressions belongs in the top 30% (in absolute value) of the distribution for that month. The introduction of a dummy variable is important in Fama–MacBeth regressions of this sort, because its coefficient can be interpreted as abnormal returns (Gompers et al., 2003; Mueller et al., 2017).

The vector of firm characteristics includes size (defined as the log of market capitalization at the end of month $t-2$), the book-to-market ratio (calculated in logs each July and held constant through the following June), the ratio of dividends in the previous fiscal year to market value at calendar year-end (calculated each July and held constant through the following June), cumulative returns over months $t-3$ through $t-2$, months $t-6$ through $t-4$, and months $t-12$ through $t-7$, the log of the dollar volume of trading in the stock in month $t-2$, and the log of the stock price at the end of month $t-2$.[25]

The factor loadings are calculated for the market, size, book-to-market, investment, and profitability factors from Fama and French (2015), the momentum factor from Carhart (1997), and the liquidity factor from Pástor and Stambaugh (2003). For each factor, I estimate stock-level loadings using a rolling 36-month window (e.g., Hong and Kacperczyk, 2009). Finally, idiosyncratic volatility is defined following Ang et al. (2006) as the standard deviation of the residuals from time series regressions of daily individual stock returns on the Fama–French market, size, and book-to-market factors, and used to capture stock-level differences of opinion (Baker et al., 2007).

The priors are as follows. Highly sensitive stocks should earn a negative alpha following months with positive net disapproval, and a non-negative alpha in other months. The results, reported in Table 12, lend support to this prediction. I find that highly sensitive stocks earn a negative and significant alpha of −0.95% following months of positive net disapproval (column (1)), whereas abnormal returns are close to zero in both magnitude and significance in other months (column (2)).

To test whether the difference between the two coefficients is significant, I re-estimate the test equation as a pooled OLS regression with standard errors double-clustered by firm and time (e.g., Thompson, 2011), and introduce an interaction term between the sensitivity dummy and the positive net disapproval dummy. Consistent with the previous set of results, I find that the coefficient of the interaction term is negative and significant, whereas the coefficient of the standalone sensitivity dummy is close to zero in both magnitude and significance (column (3)).

[24] Hong and Kacperczyk (2009) propose this procedure to include a pure time-series variable in Fama–MacBeth regressions of this kind. In their case, they consider excess returns on the stock market portfolio.

[25] As in Brennan et al. (1998), the first lag of returns and all variables involving the price level are excluded to avoid any spurious association with the current month return, caused for example by thin trading or bid–ask spread effects (e.g., Jegadeesh, 1990). However, all the results that follow are similar when including the first lag of these variables.

Table 12
Net disapproval and stock-level returns.

	(1) $ND_{t-1} > 0$	(2) $ND_{t-1} < 0$	(3) Full	(4) Democrats	(5) Republicans
$Sensitive_{t-1}$	−0.0095***	0.0009	−0.0028	0.0020	−0.0028
	(−2.88)	(0.97)	(−0.72)	(0.83)	(−0.40)
$Sensitive_{t-1} \times PND_{t-1}(d)$			−0.0121**	−0.0040	−0.0242***
			(−2.30)	(−0.80)	(−2.80)
$Book\text{-}to\text{-}market_{y-1}$	0.0029***	0.0027***	0.0041***	0.0030**	0.0062***
	(5.00)	(6.19)	(3.55)	(2.09)	(3.37)
$Dividend\ yield_{y-1}$	−0.0011**	−0.0012**	−0.0000	−0.0007	0.0000
	(−2.02)	(−2.50)	(−0.47)	(−1.35)	(0.53)
$CumRet_{t-2,t-3}$	0.0033	0.0080	−0.0220**	−0.0292*	−0.0186
	(0.35)	(1.27)	(−2.17)	(−1.74)	(−1.62)
$CumRet_{t-4,t-6}$	0.0051	0.0017	−0.0136	−0.0254*	−0.0043
	(0.73)	(0.37)	(−1.49)	(−1.80)	(−0.39)
$CumRet_{t-7,t-12}$	0.0107***	0.0086***	−0.0016	−0.0026	−0.0013
	(2.72)	(2.95)	(−0.26)	(−0.30)	(−0.15)
$Size_{t-2}$	0.0007	0.0016***	0.0018	0.0013	0.0023
	(1.52)	(4.16)	(1.34)	(0.73)	(1.25)
$Price_{t-2}$	−0.0007	−0.0076***	−0.0097***	−0.0066***	−0.0128***
	(−0.73)	(−7.88)	(−6.33)	(−3.71)	(−4.92)
$Volume_{t-2}$	−0.0003	−0.0009***	0.0010	0.0008	0.0004
	(−0.80)	(−2.91)	(0.71)	(0.45)	(0.21)
$iVol_{t-2}$	0.0956	−0.1792**	0.1959	0.1317	0.1251
	(1.11)	(−2.20)	(1.42)	(0.83)	(0.58)
Factor loadings	Y	Y	Y	Y	Y
Fama–MacBeth	Y	Y	N	N	N
Pooled OLS	N	N	Y	Y	Y
Observations	192,418	268,186	460,604	249,777	210,827
R-squared	0.41	0.33	0.01	0.01	0.01

Panel regressions of monthly excess stock returns on a dummy variable for stocks that are highly sensitive to Gallup's beginning-of-month positive net disapproval over the U.S. president's job, a dummy variable for positive net disapproval at the beginning of the month ($PNDD(d)$), a vector of firm-level controls from Brennan et al. (1998), idiosyncratic volatility ($iVol$), and stock-level factor loadings. All the variables are described in the text. For easy reference, the Appendix includes a brief description of the main independent variables. The estimation period includes months characterized by initial positive or negative net disapproval (ND), respectively, in columns (1) and (2), the full sample in column (3), and months of Democratic or Republican administrations, respectively, in columns (4) and (5). The estimation method is Fama–MacBeth regressions for the specifications in columns (1) and (2), and pooled OLS regressions with standard errors clustered by firm and time for the specifications in columns (3) to (5). The numbers in parentheses are t-statistics (*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$).

As an additional test, I also re-estimate the equation in subsamples of Democratic and Republican presidencies, respectively (columns (4) and (5)). The analysis reveals a clear-cut pattern. The coefficient of the interaction term is negative and highly significant when the president is a Republican, and not significant under Democrats.

Overall, the main results from the time series analysis carry over to the panel regressions.

4.6. Testing the mechanism

In the last set of tests, I further examine the mechanism through which pessimistic opinions are not fully incorporated into stock prices. There are three potential channels. First, pessimistic agents who are invested simply sell their stocks to optimists. Second, pessimistic agents who are not invested are unlikely to buy. Third, uninvested pessimistic agents do not sell short because they face short-sales constraints. Altogether, these channels imply that high presidential disapproval should be associated with negative mutual fund flows, as pessimistic investors sell out of the market, and lower breadth of ownership, as fewer investors hold long positions.

To test the first prediction, I analyze the relation between presidential disapproval and monthly mutual fund flows from the CRSP Mutual Fund Database. To this end, I consider mutual funds with the following objectives (Lipper codes in parentheses): S&P 500 Index Objective Funds (SP), Mid-Cap Funds (MC), Small-Cap Funds (SG), Micro-Cap Funds (MR), General Bond Funds (GB),

Table 13
Net disapproval and mutual fund flows.

	Equity				Bonds	
	(1) SP	(2) MC	(3) SG	(4) MR	(5) GB	(6) MM
$PND(d)$	−0.0096**	−0.0078**	−0.0135***	−0.0264***	−0.0060	−0.0016
	(−2.44)	(−2.07)	(−2.84)	(−2.89)	(−0.85)	(−0.50)
$Rm(VW) - Rf$	1.6912***	2.1088***	2.1312***	2.1908***	0.2030**	−0.3727***
	(32.63)	(51.86)	(38.26)	(34.41)	(2.48)	(−9.10)
$Rm(VW) - Rf_{t-1,t-12}$	−1.1842***	−1.4085***	−1.0102***	−0.4842	−0.8488***	−0.0072
	(−5.28)	(−7.96)	(−2.89)	(−0.71)	(−2.67)	(−0.04)
$Flows_{t-1,t-12}$	0.7723***	0.7966***	0.5562***	0.2862*	0.3887***	0.5447***
	(9.80)	(10.02)	(3.44)	(1.91)	(4.32)	(5.00)
Controls	Y	Y	Y	Y	Y	Y
Observations	299	299	299	299	299	299
Adj. R-squared	0.94	0.88	0.81	0.69	0.18	0.49

OLS regressions of monthly mutual fund flows, defined as the percentage change in assets under management less the percentage change in net asset value, on a dummy variable for positive net disapproval over the U.S. president's job at the end of the month ($PND(d)$), value-weighted excess returns on the stock market portfolio ($Rm(VW) - Rf$), the average value-weighted excess return on the stock market portfolio over the previous year, and the average net mutual fund flow over the previous year, macroeconomic variables from Santa-Clara and Valkanov (2003), and political indicators. The sample includes mutual funds from the CRSP Mutual Fund Database with the following objectives (Lipper codes in parentheses): S&P 500 Index Objective Funds (SP), Mid-Cap Funds (MC), Small-Cap Funds (SG), Micro-Cap Funds (MR), General Bond Funds (GB), and Money Market Funds (MM). All the variables are described in the text. For easy reference, the Appendix includes a brief description of the main independent variables. Heteroskedasticity and autocorrelation-robust t-statistics are reported in parentheses ($^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$).

and Money Market Funds (MM). The first four types of funds invest by taking long positions in stocks, whereas the last two take long positions in bonds (GB and MM). The latter group of funds then represents a set of safer investments.[26]

If investors sell their stocks in months of high presidential disapproval, equity funds should experience negative flows during those months. To test this conjecture, I regress net mutual fund flows, defined as the percentage change in assets under management less the percentage change in net asset value (e.g., Edelen and Warner, 2001), on the following variables: the positive net disapproval dummy, which marks months in which presidential disapproval ratings are higher than approval ratings; a set of controls inspired by Edelen and Warner (2001), which includes excess returns on the stock market portfolio, the average excess return on the stock market portfolio over the previous year, and the average net mutual fund flow over the previous year, where the latter two variables capture the potential feedback effects of various lags of market returns and fund flows on current fund flows; and the set of economic and political controls introduced above in the time series analysis.[27]

The results are in Table 13. Consistent with the conjecture, I find that equity funds experience negative and significant fund flows during months of positive net disapproval (columns (1) to (4)). The effect is equal to −0.96% for Index Funds, −0.78% for Mid-Cap Funds, −1.35% for Small-Cap Funds, and −2.64% for Micro-Cap Funds. Interestingly, the inverse relation between the magnitude of the effect and market capitalization mirrors the findings from the size-decile breakdown in the time series analysis. In unreported tests, I find similar results when leaving out excess stock returns as a contemporaneous regressor, which allays the concern that its high correlation with equity fund flows may partly bias the estimates (Edelen and Warner, 2001). Overall, the findings provide support to the idea that investors sell out of the equity market when they feel pessimistic about the presidency.

On the other hand, the effect of positive net disapproval on fund flows is largely outside of the rejection region for mutual funds that invest in bonds (columns (5) and (6)). In untabulated analyses, I also find insignificant estimates for fund flows in alternative asset classes with hedging properties, such as gold (e.g., Sherman, 1982), or currencies (e.g., Glen and Jorion, 1993).[28] Altogether, these results indicate that pessimistic investors do not seem to engage in a flight to safety.

This investment behavior is consistent with previous research on individual investors. For example, Polkovnichenko (2005) shows that American households simultaneously hold both perfectly diversified portfolios (through mutual funds) and largely undiversified portfolios (made up of very few assets), as a form of loss aversion (Kahneman and Tversky, 1979). Specifically, they seem to consciously allocate a substantial fraction of wealth to investments with high idiosyncratic risk, in the hope to capture large though

[26] Specifically, the investment objectives are as follows: S&P 500 Index Objective Funds replicate the performance of the S&P 500 Index, including reinvested dividends; Mid-Cap, Small-Cap, and Micro-Cap Funds respectively invest in companies with market capitalization less than $5 billion, $1 billion, and $300 million at the time of purchase; General Bond Funds invest in corporate and government debt issues; and Money Market Funds invest in high-quality financial instruments rated in the top two grades with dollar-weighted average maturities of less than 90 days.

[27] Due to missing observations, however, the sample period starts in February 1991.

[28] These funds are respectively classified by Lipper as Precious Metals Equity Funds (AU), which primarily invest in gold, and Currency Funds (CRX), which invest in a basket of U.S. and foreign currencies through short-term money market instruments, derivatives, and cash deposits.

unlikely gains. Since mutual fund flows reflect active reallocation decisions of individual investors (e.g., Antoniou et al., 2016), it is plausible that pessimistic investors that sell out of equity funds in times of high presidential disapproval may seek riskier (rather than safer) investment alternatives, such as individual assets, thus turning away from the mutual fund industry.[29]

In the second group of tests, I conduct a stock-level analysis to test the prediction that breadth of ownership decreases in times of high presidential disapproval, because pessimists sell to optimists. To this end, I estimate breadth of ownership regressions from Chen et al. (2002), and include the positive net disapproval dummy as an additional regressor. To make this inclusion possible, I estimate the test equation as a pooled OLS regression, with standard errors clustered by firm, time, and quarter, where the latter cluster addresses the concern that there are institutional factors, such as year-end tax-loss-selling and window-dressing, that make standard errors correlated within specific quarters (Chen et al., 2002).[30] Moreover, given the correlation between breadth of ownership and firm size (Chen et al., 2002), which in turn could proxy for frictions and impediments to arbitrage in its own right, I adjust breadth of ownership for size in cross-sectional regressions following Nagel (2005).[31]

The results are in Table 14, column (1). Consistent with the conjecture, I find that breadth of ownership decreases by 1.2% when end-of-quarter net disapproval is high. As an additional test, I also analyze whether the mechanism is especially pronounced in times of low sentiment. The intuition is as follows. If the distribution of unsophisticated investors' beliefs shifts to the left when sentiment is low, the number of investors who are willing to hold long positions in equities should also decrease. Therefore, the effect of positive net disapproval on breadth of ownership should be even more pronounced in times of low sentiment. The results, reported in columns (2) and (3), lend support to this prediction. When end-of-quarter investor or consumer sentiment is low, the magnitude of the effect increases to 3.5% and 4.0%, respectively.

Finally, I analyze whether these effects are particularly strong for stocks that are sensitive to presidential disapproval. To this end, I add the sensitivity dummy introduced above in the panel regressions of returns, and study its interaction with the other variables of interest. The estimates, reported in column (4) to (6), are consistent with the conjecture. For stocks that are highly sensitive to presidential disapproval, breadth of ownership decreases by 2.5% when end-of-quarter net disapproval is high, and the effect increases in magnitude to 5.9% and 3.5%, respectively, when end-of-quarter investor or consumer sentiment is low.

Overall, these additional results lend support to the theoretical prediction that pessimists sell out of the equity market.

5. Conclusion

Recent research shows that political affiliation affects investor behavior and stock returns. In this paper, I study the effect of nonpartisan political views on stock prices using Gallup's presidential approval ratings. This approach addresses the concern that political evaluations do not necessarily coincide with party lines, as parties are often divided within their own ranks. To the degree that pessimists abstain from trading, times of high presidential disapproval should be characterized by overpricing, and then low subsequent returns.

The empirical evidence lends support to this hypothesis. I show that large net disapproval over the U.S. president is followed by low stock returns, and the effect is especially strong in times of high political uncertainty and low market-wide sentiment. Also, the relation between net disapproval and political uncertainty explains away Santa-Clara and Valkanov's (2003) presidential puzzle. The findings suggest that nonpartisan political opinions, much like party affiliation, have a substantial impact on stock prices.

Appendix. Description of variables

This appendix includes a brief description of the main variables used in the empirical analysis, listed in alphabetical order for ease of reference.

Approve – Proportion of Gallup respondents that approve of the U.S. president's job.

BEXPM/BEXPH – Mean (M), calculated by imposing a (−1, 1) domain for the answers (positive = 1, neutral = 0, negative = −1), or negative Herfindahl index (H) of the 12-month business conditions forecasts ($BEXP$) from the Thomson Reuters/University of Michigan Surveys of Consumers, available from January 1978.

CS – The University of Michigan consumer sentiment index, available from November 1952.

Democrat – Democratic president, defined as a dummy variable that takes on a value of one if the president is a Democrat, and zero otherwise.

DG – Divided government, defined as a dummy variable that takes on a value of one if government is divided, i.e., the instance in which the White House and Congress do not share the same political color, and zero otherwise.

Dispprove – Proportion of Gallup respondents that disapprove of the U.S. president's job.

EPU – The index of economic policy uncertainty from Baker et al. (2016), available from January 1985.

[29] For example, previous literature suggests that such alternatives may include stock picking (e.g., Polkovnichenko, 2005; Barber and Odean, 2013), and a variety of structured products (e.g., Polkovnichenko, 2005; Célérier and Vallée, 2017). While it is hard to make assessments on the relative importance of each, it seems unlikely that stock picking alone may capture all reallocations: the main avenue through which individual investors participate in the stock market is mutual funds (Antoniou et al., 2016), as direct participation is relatively limited (Polkovnichenko, 2005). The overall negative effect of net presidential disapproval on market returns lends support to this interpretation.

[30] Clustering by time alone is then inadequate here, because it imposes the restriction that observations are independent if they are in the same quarter but in different years (e.g., Cameron and Miller (2015) for an excellent discussion).

[31] The sample period for these tests is from 1980q2 through 2015q4.

Table 14
Net disapproval and breadth of ownership.

	(1)	(2)	(3)	(4)	(5)	(6)
$PND(d)$	−1.2295***	0.5946***	1.5657***	−0.3593	−0.4580	−0.3632
	(−3.20)	(7.71)	(3.72)	(−0.80)	(−1.01)	(−0.78)
$PND(d)$ ×*Low IS*		−3.5148***				
		(−5.28)				
$PND(d)$ ×*Low CS*			−4.0243***			
			(−3.99)			
Sensitive ×$PND(d)$				−2.5329***	0.7192	−0.0144
				(−4.01)	(1.07)	(−0.02)
Sensitive ×$PND(d)$ ×*Low IS*					−5.9011***	
					(−4.20)	
Sensitive ×$PND(d)$ ×*Low CS*						−3.4851***
						(−6.35)
$\Delta Holdings$	26.1258***	25.8253***	26.3607***	25.9426***	25.7635***	25.9603***
	(3.50)	(3.53)	(3.62)	(3.43)	(3.48)	(3.44)
Log-size	2.2369**	2.1360**	2.2076**	2.2277**	2.1502**	2.2269**
	(2.46)	(2.41)	(2.44)	(2.47)	(2.42)	(2.46)
Book-to-market	0.7218***	0.6046**	0.6747**	0.7219**	0.5821*	0.7171***
	(2.62)	(1.96)	(2.41)	(2.50)	(1.78)	(2.60)
Momentum 12	2.0086***	2.0349***	2.2678***	1.9675***	1.9671***	2.0391***
	(5.05)	(5.55)	(5.19)	(5.25)	(5.42)	(5.32)
Turnover	−0.6215***	−0.8840***	−0.6405***	−0.5987***	−0.8053***	−0.6006***
	(−9.44)	(−5.86)	(−8.14)	(−9.39)	(−5.64)	(−9.79)
Observations	24,105	24,105	24,105	24,105	24,105	24,105
R-squared	0.08	0.08	0.08	0.08	0.08	0.08

Panel regressions of the log-change in the breadth of ownership for a stock in quarter t on a dummy variable for positive net disapproval over the U.S. president's job at the end of quarter t ($PND(d)$), a dummy variable for below-median investor sentiment (IS) or consumer sentiment (CS) at the end of quarter t, a dummy variable for stocks that are highly sensitive to positive net disapproval over the U.S. president's job at the end of quarter t, the change in aggregate mutual fund holdings of a stock in quarter t, the log of market capitalization at the end of quarter t, the most recently available observation of book-to-market ratio at the end of quarter t, the raw return from the beginning of quarter $t-3$ to the end of quarter t, and share turnover at the end of quarter t. All regressions are estimated through pooled OLS and include standard errors clustered by firm, time, and quarter. The numbers in parentheses are t-statistics (*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$).

GOVTM/GOVTH – Mean (M), calculated by imposing a (−1, 1) domain for the answers (positive = 1, neutral = 0, negative = −1), or negative Herfindahl index (H) of the government economic policy evaluations ($GOVT$) from the Thomson Reuters/University of Michigan Surveys of Consumers, available from January 1978.

INDPROM/INDPROS – Mean (M) or standard deviation (S) of forecasts of the industrial production index ($INDPRO$) from the NBER/Federal Reserve of Philadelphia Survey of Professional Forecasters, available from December 1968.

IS – Baker and Wurgler's (2007) monthly investor sentiment index, orthogonalized to business cycle indicators, available from July 1965.

iVol – Idiosyncratic volatility, defined following Ang et al. (2006) as the standard deviation of the residuals from time series regressions of daily individual stock returns on the Fama–French market, size, and book-to-market factors.

ND – Net disapproval ratings, defined as the difference between disapproval and approval ratings.

Neutral – Proportion of Gallup respondents that express no opinion on the U.S. president's job.

NND – Negative net disapproval, defined as a variable that equals the difference between disapproval and approval ratings when this difference is negative, and zero otherwise.

NND(d) – Negative net disapproval dummy, defined as a dummy variable that takes on a value of one when the difference between disapproval and approval ratings is negative, and zero otherwise.

PND – Positive net disapproval, defined as a variable that equals the difference between disapproval and approval ratings when this difference is positive, and zero otherwise.

PND(d) – Positive net disapproval dummy, defined as a dummy variable that takes on a value of one when the difference between disapproval and approval ratings is positive, and zero otherwise.

Rf – Risk-free rate, defined as the return on 30-day T-bills from Kenneth French's website.

RGDPM/RGDPS – Mean (M) or standard deviation (S) of forecasts of the real gross national product ($RGDP$) from the NBER/Federal Reserve of Philadelphia Survey of Professional Forecasters, available from December 1968.

Rm(EW) – Returns on the equal-weighted stock market portfolio from CRSP.

Rm(VW) – Value-weighted returns on the stock market portfolio, defined as the set of all stocks traded on the NYSE, AMEX, and NASDAQ, and retrieved from Kenneth French's website.

Sensitive – Stock-level sensitivity to PND, defined as a dummy variable that takes on a value of one if the coefficient of PND from a rolling 36-month regression of excess stock returns on beginning-of-month PND, NND, $PND(d)$, and $NND(d)$ belongs in the top 30% (in absolute value) of the distribution, and zero otherwise.

ST – Presidential second terms, defined as a dummy variable that takes on a value of one if the president is on a second term, and zero otherwise.

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